

ABSTRACT OF THE DISCLOSURE

A diffraction device using a photonic crystal includes a diffraction grating, which has a period and periodically divides electromagnetic waves, and an input medium and an output medium, which contact the diffraction grating. The input medium is air, and the output medium is a one-dimensional layer having a periodic characteristic in a single direction (Z axis direction). The photonic crystal is formed by a periodic multilayer film having a period corresponding to the sum of the thickness of a first substance and the thickness of a second substance, which are superimposed. The diffraction device drastically decreases the resolution corresponding to the difference of the separated frequencies.

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